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(54) Title: SMART COMMUNICATION INTERFACE DEVICE, APPLICATIONS AND ENHANCED MOBILE PRODUCTIVITY FEATURES

(57) Abstract: A method of operating apparatus connected to a communication system, the apparatus including a distributed mobile architecture of at least two input/output devices having display means or speaker/microphone means. The method includes providing a software mobile voice and data interface whereby said input/output devices communicate with each other to provide a variety of telephony voice and mobile data/content and messaging functions to be sent or received over the communication system.

SMART COMMUNICATION INTERFACE DEVICE, APPLICATIONS AND ENHANCED MOBILE PRODUCTIVITY FEATURES

The present invention relates to voice and data communication devices and, in particular, suitable to distributed mobile architecture solutions driven by computer software that is designed to interact between applications and devices and add provide feedback, content/messaging updates and productivity features to current connected mobile and / or computer / telephony devices and emerging Integrated and wirelessly connected Smart Phone and Communicator devices.

Software is used in the application of simple integrated concepts that utilise telephony, messaging and Personal Information Management Systems (PIMs) and enable the user to retrieve or synchronise relevant information, messages or content via a common Smart User Interface, across a variety of platforms and devices (within their limitations) that will increase productivity or provide relevant feedback on data required in time-critical situations. The invention also includes a distributed mobile architecture device, as an example, that utilises the interface design for input and output via a palmtop displaying keyboard, a watch type display, a wireless handset with voice input and display-less mobile phone device host.

BACKGROUND TO THE INVENTION

As the migration of the computer, the internet and the mobile telephone continues, we will start seeing more and more devices that explore and push the current limits and boundaries of technology. These devices will start to interact more with other common input/output devices such as watches, headsets and even glasses to see, hear and say (via voice recognition) a range of voice and data services including phone calls, messaging, content access and synchronisation.

In order for this mobile revolution to succeed, substantial investments by mobile phone, palmtop computing / PC, Internet and Mobile Operators are being pursued.

The success or failure of these devices will be based on whether there is a consumer want and need; affordability; usable interface which is not a limitation; right content mix, ie this includes all types of services and portals to get there; customer service and features to which many consumers today have an expectation on some of the services offered, how simple they are made and how they work in background; comfort and ease to use technology; platform support, apart from the stand-alone functions, the next generation of mobile devices will need to inter-connect with a number of platforms and other purpose built display, audio and mobile host devices; Telecom Carrier / Mobile Vendor

support, ie the cost of the devices (as in subsidies to sell airtime) and the complimentary services made available by the Mobile Vendors; synchronisation capabilities, which includes the ability to synchronise any device, anywhere, all the time.

There are also many more regional, political and traditional influences apparent.

The invention is designed to address some of these issues by introducing a suite of software that is designed to assist in the delivery of the "Smart" Integrated Communicator. This invention targets existing wireless phones, wired and wireless palmtops/notebooks and PCs and headsets and new emerging technologies for information display and audio /video input and output.

In particular the invention addresses the following: user interface; consumer want and need; customer service features; ease of use; smart functions; platform support; telecom carrier support; and synchronisation capabilities.

The invention also outlines a flexible distributed mobile hardware architecture that is designed to allow the software to inter-connect with existing hardware and emerging devices. These include: Display devices; Palmtops, Watches and phones; Input devices : Palmtops, Phone Keypads, Audio recognition input, Click for Operator connected audio input, Headsets (wired or wireless)

OBJECT OF THE INVENTION

It is an object of the present invention to provide a communication device interface with enhanced applications and mobile productivity features. At the very least the object of the present invention is to provide an alternative to known systems that includes a complete distributed mobile hardware architecture that interacts via the software on the various hardware devices available.

DISCLOSURE OF THE INVENTION

According to one aspect of the invention there is disclosed a method of operating apparatus connected to a communication system, the apparatus including a distributed mobile architecture of at least two input/output devices having display means and/or audio (speaker/microphone) means, said method including providing a software mobile voice and data interface whereby said input/output devices can communicate with each other to provide a variety of telephony voice and mobile data/content and messaging functions to be sent or received internally between the devices or over the communication system.

Preferably the interface includes a common content and data browsing interface whereby the method includes an integrated approach to search, save and link content between the input/output devices using the common browser interface.

In a preferred form, the common browser interface includes a messaging interface used to create, manage and send/receive messages in various messaging formats. The messaging interface includes a messaging mechanism formatting means which can format a type of messages into other multiple message format types to be used in a selected mode of communication between other apparatus on the communication system.

Preferably, the method provides a profile compilation means whereby a profile of contact persons is stored, the profile indicating the preferred communication type to be used for any particular contact person. The profile includes how the contact person prefers to be contacted, when and how they usually respond to communication, timeframes and method of feedback. Furthermore, the profile may link websites and other content and the like and also link associations between different contact persons.

In another preferred form, the method includes combining answer and reject inbound / outbound call functions with an audio call playback message and / or instant messaging /sms to enable user to respond when unable or unwilling to take a voice call or other type message. This can include a call barring and/or instant messaging/preset templates for sms to reject, limit access and advise unavailability to nuisance or unavailable feedback to other callers.

In a further preferred form, one of the input /output devices includes phone device with a SIM Card slot, whereby the method addresses a requirement to Un-Block a locked phone. This includes unlocking of the SIM which has been blocked, by enabling the user to dial the Telecom Carrier of the blocked phone from the said mobile phone and allowing the user to unlock their phone device directly, rather than requiring the use of another mobile or land-line phone and obtaining the requisite information of who to call to do so. The step of calling the carrier is enabled by adding the Telecom carrier in the SIM register for Emergency Numbers alongside the International Emergency number which is compulsory on all mobile phones and is not not barred from placing calls.

In a further form, one of the input /output devices includes phone device with a SIM, connected directly or indirectly with other input/output devices whereby the method forwarding critical data to the other connected devices which can read said data, in the case of a number dialled and / or an emergency call is being made when battery of said phone device is detected as low. The other input/output device includes a display means, storage means and operational means to address the emergency or low battery inconvenience. The critical data may include other relevant data including land-line and mobile emergency numbers, listing of last five cell towers connected to, GPS co-ordinates (if available), user medical summary and the like. Preferably, if signal strength or battery is low in the phone device a message/sms may be sent to an emergency preset device or relevant details may be forwarded to other input/output device prior to emergency call being made. This ensures location and caller data is forwarded prior to battery depletion that may run out before call is connected. An SMS or instant message uses less power requirement on the hardware and by using SMS or instant message, the user can reach an emergency preset location prior to phone drainage. By conserving battery power, the software also can receive SMS or instant messages prior to battery drainage enabling two-way communication on low battery charge.

In a further form, all associated time-clocks within the apparatus are updated when the apparatus is detected as being in the roaming mode or out of current time-zone.

Preferably, the apparatus shares the current time-zone information of the apparatus with a server or other users of the communication system. The sharing of information is updated via messaging or other Client Server based system. It may be wireless or wired connectivity and updating..

In a further preferred form, the apparatus detects in which particular country the apparatus is presently roaming and provides international code requirements for dialling format for its use. The user is able to input a call number in the apparatus, advise the location and country this format is dialled from, and then the software provides suitable dialling format to be used from the current or optionally other country locations. The dialling format is displayed on the input/output device to indicate how to call from either a mobile phone or landline arrangement and may also automatically dial the required number in the requested format.

In the preferred form, the apparatus includes a mobile phone with wired or wireless connection (or integrated device) to a portable or fixed computing device and some form of audio communications.

BEST MODE OF CARRYING OUT THE INVENTION

Most mobile users today use a phone and a computer connected wired or wirelessly to perform voice and data functions. Very few users actually use these devices together to collect, collate and manage their day. The preferred embodiments of the present invention implements methods of collating data into categories and accessing this data via an interface. This can be managed via a range of input/output devices that the user may have or choose to use that are interconnected (wired or wireless), and controlled and managed by the software.

These may include a phone handset, where the display is used to identify an phone address book entry caller, then the user may switch on the palmtop organizer (which is also connected) that has software also that retrieves related data to that caller. The user may also on entry into the office, interconnect with the desktop PC (wired or wirelessly) and the PC that also has the software may detect the caller and displays messages on the office PC (e-mail, faxes, Voice Mail Messages).

To achieve this integration of the mobile phone with a computer device, mobile voice and data is categorized as follows.

The basic categories are with the different types of menus usable:

Content Browsing – all information is referred to as content;
Messaging Data – all types of messaging : email, fax, SMS, chat, Voice Mail;
Telephony and Audio – this includes music, audio and mobile phone functions;
Synchronisation – this includes interaction and synchronisation options with other devices.

These categories compliment the existing Personal Information Manager functions on most mobile and computing devices (Address Book, Diary/To-Do List and Notepad).

By categorising the data and accessing it via the above category menus, the user can quickly retrieve the required data and also retrieve other associated data on that user (or associated linked users), quickly and efficiently.

In today's systems on portable devices, this is non-existent. Although some aspects exist and are Vendor specific, they fail to incorporate such a novel integrated approach and system. This defined

user interface enables the user to retrieve categories without requiring specifics initially and then probe by data type or retrieval of data on a specific person or company for example.

The Categories in more detail:

Content browsing: in order to better manage the vast amounts of data, the embodiments of the present invention categorises all data as content. This content is accessible by various viewers which are known as Browsers. The Browsers of today are designed to automatically launch when content of a format supported by the browser is selected. This feature is evident in many desktop solutions and is creeping into the mobile device space. The interface of the embodiments of the present invention enhances this feature further through a common Content Window and the ability to link, sync and manage this content with messaging services (messages are considered content, however they may be classified as a separate category due to the frequency of use, their ability to attach other content with messages and the diversity in messaging formats – email, sms, chat, fax, instant messages, multimedia messaging).

Through the use of the Content Browsing Interface, any content can be: viewed, edited, printed, forwarded, searched and tagged. This content can be displayed in a variety of ways on a variety of mobile hardware devices and within their limitations.

This includes :

1. text line data for non-graphical displays;
2. audio text to speech for headset/audio player output
3. full graphic display for graphics enabled devices
4. simple multimedia for devices that support text and simple graphics and / or audio.

The major benefit that is retained to existing offerings, is in the interface design which allows the user to search for content quickly through one known menu and interface and within the limitations of the input mobile device.

The preferred embodiments of the invention take existing content browser features, identifies the common areas and function buttons and presents these in a common interface. This way if a user is searching for some content in a known browser (eg. Searching html sites for a keyword), if a match or matches are found it will function as a normal browser. If however, the supported format does not

find any matches, the same data can be searched in another browsing format (eg. WAP, VxML, Audio/Video formats etc) or even multiple formats without requiring the user to change browsers and / or link and launch another application. The Interface does this in background. This flexibility enables the user to save time and increase productivity through the re-use of common search, save and indexing functions.

The search format can also display a search function by preferred format, by selecting off a list of supported formats or from more traditional means such as that applications custom browser. Any un-common or non-shared menu option fields are customised according to the retrieved contents menu options and file format. For example each browser may have its own menu and the un-common or non-shared menu option fields of each browser are retained when using that particular browser. Developers may use common Application Programming Interface (API) software development tools to integrate seamless access from existing browsers.

The end result is a simple integrated search and display system for a variety of content on mobile devices. Furthermore the invention also outlines filters designed to enable this formatted content for a specifically desired mobile device. For example, text retrieved content may have a watch display or Palmtop display as the preferred default display hardware. Audio music files, may be directed to an audio stereo headset. Flexibility for changing settings enables the user to personalize delivery of the desired content.

The embodiments of the invention also outline a smart feature related to content being added to a Favourites list. In such a case, the Content Browser may link to an advanced search engine that scans the PIM for contacts with references to the content address or to the main home page. This may be a web address, email address (software may strip for example, everything in front of "@" symbol and try to make a match with some or all of the remaining address details), or it may search for the company name in a web address, or search for a name in the email address and link to the web address etc. The smart feature outlined here, can include a cross-reference and / or link to a specific location, address or associated content to that contact. This enables any content with a web link to be related to any contact or user or website. For example if a website : www.abc.net is the home page of the ABC company and a certain page www.abc.net/tvguide.html is the TV Guide put out by Mr C. Jones of that company, the program may link this guide to Mr Jones and also tag www.abc.net as associated content. If the tv guide page is changed, the foundation link or other address book entrants in that

company with other pages may also be added or be linked enabling the user to access associated contacts and content. The content may also be documents and other file types. If another user is setup and a link is attempted, the system may also link Mr Jones as an associated link along with all content linked to that record.

The Content Viewer User Interface (or UI) may also be linked to the other software smarts including the Profile Settings, Messaging Data, Phone Applications and Synchronization modules described below.

Profile Settings allow the user to set default or intelligently updating settings for existing address book entries. These entries enable content (including messaging) and Voice communication preferences to be stored.

As content is received or added on an individual, habits and personal communication trends are built and used for communications.

For example : If a contact prefers to use Chat or Web based mail as primary means of contact – this may be added to the Profile Settings as the default mechanism of communications with this contact. If it is via a web page for input, again this is launched when Messaging is launched (with Profile settings as default). If an attempt to call the user or send an email is attempted and the Profile settings show the user doesn't like to be called (or not at this time) the software may prompt to send a chat message or leave an online message. If an email is requested for the user the software program described may prompt or launch the online message application or chat window instead of traditional email (if this has been the preferred method of communication stored). The software program described may also show links to other related content for that contact also.
Other habits that may be stored on individuals may also include making calls to office or other targeted people at a specific time(s).

For example : Most office people arrange meetings on the hour or every half hour. The software may contain a profile that reflects this common office trend. Accordingly, if the user attempts to make a call to such a person at 10:10am, hangs up due to no answer and then attempts again 1 minute later, it may prompt to attempt at 10:25am or 10:55am or suggest SMS or email.

The software may monitor dialled calls and establish whether a connection was made and who hung up the call.

This software productivity tool is designed to improve communications for all users by building profiles on people's habits.

The content Browsing menu mentioned above specifically share the browsers with a subset termed Messaging Data. This Message Data Menu, may have a separate menu screen as this also covers specific data that often is used daily. The attachments in Messaging files are content and therefore can also be linked and opened by the Content Browsers. They may also be opened, edited, forwarded or stored via a specific messaging user interface too.

The Messaging Data Window covered in this invention, includes a unified interface for sending / receiving messages. This method is designed to enable the user to :

a) Use a common messaging interface for all messaging data input
b) Switch from one message type to another and retain the main embodiment of a message ie. New Email message to New Fax or SMS/Pager message retains Receiver name and associated communication details (phone, fax, email) and the main text of the message.
c) Send a message to a Group by Message Profile Type
    a. By preferred correspondence (at that time or always)
    b. As a Broadcast message (suitable for broadcasting Fax, Email,Chat and SMS
    c. According to Receiving User device
    For example :
        i. If mobile send SMS or other text message
        ii.If Wireless Palmtop send Email or Instant Message
        iii. If in office send Fax or Email
        iv. If Multimedia Mobile Device send with pictures/video and audio

Messaging Data includes a range of different messaging types including :

Email – one of the world's most popular forms of electronic interchange;

SMS / Paging – a popular mobile phone and pager text messaging technique;

Fax – a popular business tool for point to point communications;

Chat and Instant Messaging – a system where people can meet and chat in groups or one to one and type lines of text to globally communicate electronically;

Voice Mail – a method of electronically storing a voice message that can be heard, saved, forwarded or deleted;

Others – customised, unique and derived messaging products that may include text, audio and / or graphics/video/animation.

The embodiments of the invention ensure the integration of the interface allows the user to send one type or multiple types of messages and the ability to receive in much the same manner on a range of input and output devices (as described in our distributed mobile architecture system).

By offering these messaging interface options to the user, a message can be sent in multiple formats or by using the smart profile preferences to accommodate for multiple or targeted group users.

The messaging interface describes a method for Creating, Editing, Managing and Synchronizing Messages in a common approach ie. A user selects "Create New Message" without needing to consider what type of message they will be sending (email, fax, SMS, Chat etc.). They can build the body of the text, the Heading and then decide on the method of messaging communication.

The messaging system then allows the user to select the contact (or group type) to send the message to the selected contact(s) or group(s), and gives the user options of delivery according to each contact's preferred delivery system ::

a) Profile – this may include best means of communication at specific time(s) or, advised preferred communication times and communication means (as described in Profiles).
b) Preferred delivery selection – User preference to send a certain type of message at this time to some or all message recipients.
c) Multiple Communication means – allows user to send any combination of fax, email, sms, chat etc. and as multiple copies.(tick box options on a per user basis)
d) Historical Data - based on return replies/communication means and added smart software trend updating collated from previous voice calls and messaging

The messaging system also allows the user to send to multiple users the same message by the same type of options : Profile, Preferred or Multiple Communications.

These Profile contact preferences that are used in this messaging system, are added or created when a new contact record is raised and is enhanced and updated in background, through prompts (on profile contact habits and trends) or through manual updating as the profile user is referenced in the

applications such as messaging or the like. If no details are entered, the messaging system has provision to prompt for details as they are entered or referenced for that user or to preset default settings. This profile updating may occur when creating messages, retrieving content or making or receiving calls. It may be done in real-time, set for later or stored for later retrieval and updating.

The messaging interface's advanced capabilities are designed to allow for quick and simple message creation and / or creation of multiple message types and changes and the delivery of these varying types for single or multiple recipients.

In order to understand the significance of this advanced interface feature, one needs to review each Message Type Option:

A still further feature is Supported Messaging Links and attachments whereby application specific links such as :Header, Cover Page or Title; Footer; Attachments or Linked files can be used throughout the different types of messaging.

The interface allows for the display from a common messaging interface the display of various types of messaging software. This may include :

Email
Fax
SMS / Paging
Chat / Instant Messaging
Voice Mail
Others – Multimedia messages and / or audio / video clips

The common interface used across all Messaging applications can easily be switched to another format and support multiple messaging formats from the one customer selection. This provides a powerful range of options to the user for ensuring open communications with their correspondents.

The messaging interface has two types of fields, common fields and application specific fields. The common fields are fields found in all messaging correspondence and include contact details which are linked from the PIM Contact / Address Book. The UI outlines a process that enables the user to search

for a contact via an advanced smart search system and once the contact is found, the messaging type relevant field is used for the messaging.
For example : If Mr Jones is retrieved as the recipient and an email is selected as the message type, switching this email to a fax automatically adjusts the delivery email address to fax number.

For UI clarity, the name, company or any other messaging detail can be customised to display also / or instead of.: default settings which preferably include contact name and message type detail, eg Email – includes email address; fax – includes fax number; SMS – includes Mobile SMS Number; Chat – ICQ Address.

Furthermore certain Profile criteria for each person to receive a message from the user can also be added to this retrieval system enabling a specific default messaging type of correspondence to also be activated.

This allows the user to send messages by recipient preference without needing excessive message customisation for creation of the message.

Other common fields are the main message content which is the main part of any message; action options which is the send and receipt options that are common on all messages. The actual features will change according to message type.

Attached content such as graphics, audio and video and formatted text that may be relevant to one type of message, may also be automatically adjusted for another form of messaging.

For example : An email that has a graphic attachment consisting of a picture and audio files attached with some formatted text, may be forward as a SMS Text message. Since Short Message Service (SMS) does not support graphics or audio attachments, these may be converted in background to another format ie. Multimedia Messaging Service (MMS) which supports portable Mobile Graphic format and Ausio Mobile format.

The same delivery may include the text as SMS and even customize the text formatting within the formats limitations ie. Simple bolding, underlining etc.

These files and content, can then be saved or archived through M2N Sync Option (a feature that categorizes all data in an index for later retrieval, archival, forwarding, cross-linking and indexing) . The system uses available messaging or content delivery communications to send data to be stored on a Client Server based system. An Index is kept on the Mobile Host (or appropriate distributed mobile architecture device) to enable review and retrieval of content which may also include Messaging data and attachments.. This M2N or (Mobile To Network Synchronisation) is the ability to add to an index of retrievable content and / or documents from a remote site (web, Remote Access Service [RAS] PC, Palmtop/Phone Sync to PC or network and other connectivity means) and to forward this content in the same or through the use of the described multi-messaging format and communication system forward this in the appropriate format, to the selected user(s) at the appropriate time.

Once a file is added to the M2N-Sync Index, it retains a common filename across all platforms that may include devices in the distributed mobile hardware architecture, Palmtop and Notebook computers or other Client Server Networked or stand-alone computers that share access (wired or wireless) to this M2N-Sync Index and File Storage system.. Files can then be retrieved, forwarded, deleted or modified as needed. In the process the M2N-Sync Index listing is maintained with a consistent index address. The M2N-Sync is a unique method of retrieval Push and Pull. Other data and content can also be filed including Log Files, Contact details and associated links. The delivery / retrieval can include existing message types including email, sms, fax or chat/instant messaging and future multi-media data types.

The messaging application specific fields in the described messaging interface and concept, are fields that change dependant on specific messaging applications. The UI can address these fields subject to the application selected and the limitations / enhancement features enabled on the UI. Furthermore the application interface offers specific data formatting and usage / limitations subject to the selected application.

For example, these features / limitations include:

Message size – certain applications (eg. SMS, Chat) may have limitations, enhanced features or short-cuts supported or enabled to facilitate that messaging service. This can include the inclusion or extraction of a Heading and Footer (SMS), the displaying of relative data sizes, features, short-cuts or merely

activating advanced background preset functions ie. SMS creation spreading over two or more SMS messages.

Application specific functions –includes messaging application specific features such as : Push / Pull : whereby a fax polls other fax machines; SMS requests something in any form of messaging to be retrieved; Email whereby emails are forwarded as SMS messages and so on.; Fast Codes which include short-cut words and phrases that can be sent and read as is on limited devices ie mobile phones or expanded word presentation with more flexible devices such as computing devices running the software .

The embodiments of the present invention includes the translation of short-cuts on the Send or receiving end and the expansion capabilities on the receiving device. This allows quick entry and is suited to limited character text based messaging. It also conserves space, cost and time as this is only expanded if the receiving device is capable of doing. So.

For Example : A tex message that says " Where Are You ?", may be sent as "Wer R U". This saves input of characters and time to send. The receiving device may be capable of reading this data against a database of phrases and expanding it to "Where Are You ?". The receiving device may be a Palmtop or PC running software with translation and messaging software or a mobile phone or low character display ie. Watch. These display devices may only display the compressed " Wer R U?" version instead.

Another example this may apply includes the sending of text based graphics to replace a real graphic.eg. A Picture of a smily face may be sent as :-) instead of ☺.

Message Delivery options is also application specific and may include: for sending SMS messages – Short Messaging Service Centre (SMSC) number to be used; for sending Faxes – defining the parameters, Fax Station ID and may also include the system to be used -mobile phone fax or land-line fax (that is wired or wirelessly connected); RAS - Email / ICQ / Web based Messaging – parameters, accounts and system to be used (mobile phone data or land-line),

Another messaging feature is the Send /Receipt options and are again messaging application specific whereby send / receipt options eg. Email can return sent, arrived and Read receipts, SMS only sent confirmation, Fax returns delivered or failure to Send Logs can be generated. These options differ

from one Messaging application to another, but also contribute to the described integrated UI and functionality.

A still further feature is the Message Formatting Wizard, which is used to assist in the viewing of current messages in another messaging format preview. This wizard enables a user to see a message formatted for one type of message (eg. SMS) as it would look if changed to a different message type (eg. Email). This is then displayed in the new message format requested. This format can be text only on some form of HTML or other standard markup language depending on the new message format being requested.Messages can be seen as they would appear on the receiving device – WYSIWIG (What You See is What You GET) and can assist in managing messaging transformation.

For example : If an email 2 pages long is to be send to 50 people. The sender may decide after message creation to use the Wizard to send this in SMS format to get to all recipients phones quickly. Or to send by Profile which includes some receiving SMS Messages.
Without the wizard preview, the Sender may send the email text body to mobile phone users over 6 messages. This multiplied by 50 people can become an expensive message send.

The Wizard may suggest reducing the text size by selecting compress (compresses available words in the built-in database), or to input a summary version for SMS or suggest sending an SMS advising recipients to check their email or callback.

The formatting wizard can also assist in creating Fast Messages by provided pre-set templates for various situations. These can also be enhanced with support for compress test (from available defined database), addition of extra text input or content and support to also preview in various required formats. Multiple send options may also be supported. The Fast Message templates can mimic frequently used feedback by industry, personal style and / or customized response.

For example : A busy business person who missed a call but has identified the calling party (from Caller ID for example), may opt to generate a Fast Message addressed to that caller's mobile device. An example of possible quick pull-down options to send a Fast Message may be 7 fields with the following headings :

- Reacting "Why" – The sender of the message may include the reason missed call – Can't talk, Unavailable, On another call, In a meeting etc.

- Reason "Explanation" – With a client, with the boss, in bad reception range, with you know who etc.
- Will Contact You "Commit to respond" – The sender commits to contact caller at a certain time – in a minute, 10 mins, lunch-time, afternoon, next week etc.
- Regarding "What About" – Sender sets subject to discuss – about the plans, the meeting, budgets, presentation etc.
- Alternative Action "Or Else Do this .." – Sender suggests alternate action – call me at home, office or mobile, leave a voice message or SMS or let's discuss at lunch, dinner or breakfast etc.

The use of such a Fast Message input form with pull-down options for relevant fields, enables the sender to generate a Fast Message. This can then be sent as is to the user/or sent by profile settings and / or formatted for other messaging formats and / or support for compressed text for mobile or limited display devices.

The examples of the present invention includes a PROFILE Builder feature whereby a profile of person to whom the user sends / receives messages is built up. The profiles which are updated constantly and probe for confirmation on changing profiles, enable the user to send a message to a variety of people that are categorised: by their preferences which in the embodiments include categories which and are based on location, hobbies, work types, levels etc; by their group which can be a specific group of people in a company or trade etc.; by their preferred message / communication delivery type which is useful for correspondence including mail-outs. Using this method, one can isolate all suitable profiles whom have expressed an interest in a specific messaging type of communication or other common parameters.

With this profile feature a user can send to any number of people a message in accordance to how they have specified they want to interact. For example, Bob has no mobile, but has a pager. Therefore it is assumed he prefers Text Message communication. Bob also has email forwarded to his pager, so email is another option. In an alternative John prefers faxes. He has all faxes also forwarded to his office assistant's email as an attachment. John has no computer and never reads Text messages on his mobile, instead he gets his office assistant to forward faxes to the nearest fax where is staying or visiting.. A better means for John is the fax and email. By building such background profiles a user can better target messages to their target messaging client using this profile builder technique.

Profiles exist today on some Personal Information Management (PIM) systems and mobile devices. These can assist users to file and set rules for responses to inbound messages on computer based PIMs.

Mobile phone users can display a graphic of a specific Profile Group type, or play a targeted ringtone for that user or group to determine the caller . Our concept enhances this further by building an intelligent database that stores methods of communication by :

a) The User – how he/she contacts the person profiled ; phone, sms, email, fax

b) Contact person – how they reply to messages and calls and feedback on their location (significant when in opposite time-zones).

If a user selects a Profile listing as the default mechanism when conducting calls or message creation, they probably will achieve the desired profile messaging and communications means best suited for that profiled person. This from time to time is distorted by factors that are out of the users control. For example, Attendance at a conference or Trade Show interstate or overseas, limits email access and / or use of fax. Moving premises limits access to fax, email or even the standard phones etc. These extraordinary circumstances may distort the Profile Builder system's recommendations unless the user enables additional rules by event and dates. This preferred feature is the "override" technique that allows the user to re-select other communication or messaging mediums that start with the Profile Builder and can build in or ignore the override settings..

Similarly, Profile Builder settings may be distorted if a user is traveling on a one off trip and is in a location on the opposite time-zone, it would not be advisable to call them in the early hours of the morning, if this is based on their local time to call preferred communication means. The system may advise to send an SMS or email instead.

Historical data can also be accumulated by the system whereby a user's base of customers and their preferred means of messaging communication is constantly monitored and suggestion prompts help the user build the profile. This is achieved by taking existing known communication and messaging delivery data and measuring the response and times for this to constantly prompt and / or update and / or rebuild a user's profile messaging settings in real-time over a period.

This data may also incorporate a feature to review or update cross-referenced links also. Behavioral patterns such as time generation of calls and messages, may also be compared to Profile Builder Data to establish a cross-link and more accurate Profile being implemented and suggested to the user. This data may also be provided in a report format to enable a user to determine the trend based on Historical Logs.

By constantly enhancing this, the system more accurately delivers a system of preferred Voice call and messaging communication based on actual data. This can also incorporate feedback in different forms of Wizard type prompting, notification and "Smart Suggestions" on effective communication and message delivery and response.

When using Telephony and Audio by the UI, the telephony interface includes technology that is designed to pre-empt a user's next move and / or provide additional resources during calls, emergencies and time-critical situations. The smart functions are categorised as options to available voice calls and data calls for content (including messaging) which can trigger a response and the forwarding of information collated, combined and made available on board the device and retrievable data or content which is sent / retrieved either wirelessly or via a wired connection. This data and content can further be categorised in a preemptive manner where a user's next request to a call or message is analysed and suggested or by a manual request where a user manually requests a preset response. All Telephony smart responses are associated to telephony functions. They can be linked to a Personal Information Management system (PIMs)and / or specific data or content databases (includes preset messages).

The significance of these Telephony Productivity features can be realised when human behaviour with mobile communications is analysed. Many users carry mobile devices with them. Quite often they are in meetings, driving or even in the office. Quite often they are engaged in some activity and have to focus on the mobile inbound ring to respond. Some just let it go to Voice Mail or let it ring out. Others answer it and leave the person on the line while they finish up what they were doing (finishing meeting, writing letter, pull over to side of kerb - while driving).

Our concept outlines a range of call response features designed to enable these users to quickly react to inbound calls. Whether they answer or reject the calls, the system should enable them to be less stressed in their reactions, more focused with minimal disruption.

To achieve this our software relies on the traditional telephony functions Answer or reject a Call) and merges these with messaging and call management features.

Some of the features include :

- Answer Call Button – traditionally used to answer call
    - Answer and Hold – may be used when finishing up another call or a meeting
        - An option may be to lookup the Address Book or search the Net for caller details prior to answering call

- If user does not want to answer, they may opt to play an audio file stating unavailable, leave a message or just forward caller to voice mail.
- Another option may be to send an SMS while on hold stating finishing up another call
- Alternatively a Smart Communicator with Audio file support (Voice Tags) may play a message stating "will be with you in a moment" then placing user on Hold
- The user may be a nuisance caller and although user may answer their call, they may choose to barr this number from calling back. A message may also be generated at the end of the call stating this phone can't call this number any longer.

- Answer and Add to Contacts
  - Enables caller to be added to Address Book before answering or during/after call with provision to add more details.
- Answer and Fast SMS
  - Enables the user to answer a call and generate a message to the same user or another user according to profile.
- Answer and enable Voice Record
  - Enables user to answer a call and record conversation
    - Options may include sending audio file to another user or storing it

NOTE : Some Mobile Devices do not support audio recording and may need additional hardware or be limited to other call response features.

- Reject Call Button – traditionally used to Reject a Call
  - Reject and Send Message – allows user to select from a quick response template or pre-sets depending on Diary entry availability
  - Reject and Barr Caller – Barrs caller from calling back
    - May include message send generation (SMS,Fax and / or email)
  - Reject and Lookup – may search number in Address Book or search web telephone books
    - Option barr, add to address book or send message
  - Reject and Send to Voice Mail or other Number
    - Voice Mail offered by many Telecom Operators
    - By forwarding caller to another number, the user may in some countries forward caller to toll numbers where the caller pays a toll fee. This may be

used by Mobile Support staff as a charging mechanism for support or to discourage nuisance callers.

The telephony features also provide so-called Emergency Services which include an Emergency Telephone Carrier Dial Key which is a function that enables a user with a locked SIM or Mobile Phone to connect directly to the Telephone Operator. This is achieved by enabling the Operator's number as a dial able service. This can be achieved in a number of ways including adding the Telephone Operator's Emergency number on the SIM Card list under Emergency Numbers. Currently the majority of Telecom Carriers only add the International 112 Emergency number. Some also include their local countries Emergency Land-line code too. The ETSI specification for Emergency Services listed on a SIM Card includes support for more than one Emergency number.

Emergency Dial Services may also be stored on more intelligent distributed mobile accessory devices whereby there is regular local data retrieval of key emergency detail retrieved as a user moves from location to location and this data is offered as quick access to generate SMS or other messages or dialing patterns with attached codes in case of emergencies.. This system may also include a Mobile Emergency Code system which may define location based data to send or displayed with the emergency numbers (mobile and PSTN phones) on Palmtop or other distributed mobile accessory hardware if main mobile device battery fails during a call. The displayed emergency numbers may also include additional numbers that depict location data generated from the Cell Station or retrieved from the Mobile Codes that can assist Emergency services to more accurately define the users location. GPS co-ordinates can also be included.

Another feature, a so-called Emergency Call Battery Failure feature is a function that displays local and mobile phone numbers on a device when the Mobile Phone Module battery loses its charge in the middle of an Emergency Call.

This feature can be displayed on a two-piece device that incorporates a phone and palmtop computer, whereas the palmtop has independent or backup battery support. By forwarding relevant local Emergency details to the Palmtop when connected, the mobile phone hardware could be set to advise the palmtop device before its batteries die that it requires the Emergency display application to launch. This feature allows the user to see the numbers to dial from both a land-line and / or other mobile phone. Additional information such as GPS co-ordinates, Last 5 Cell Towers connected to, mobile number and / or medical information may also be displayed.

For devices with one battery including Mobile Phones and mobile distributed architecture hardware, the display may be dependant on a backup battery being inserted between the battery and phone to power up the phone and display the emergency details. A small application designed for that phone or distributed mobile hardware, may also be used to achieve this. This system can function on wired devices (Phone or module connected via cable to palmtop and headset). When phone battery dies it displays on Palmtop and / or plays audio through palmtop to earpiece of headset) or wirelessly (phone, palmtop, watch display and / or headset are wirelessly connected. If phone module battery dies, causes other devices to display emergency or last call details. Display / Playback functions are dependant on the hardware limitations.

Other features include the monitoring of signal strength management and may include the sending of a emergency details in a message to Emergency services before battery dies and / or if in a bad signal strength area – causing disconnection. Software intelligence can assist a user in an emergency by pre-empting hardware behaviour from the phone hardware. The management of calls dropped out due to battery low, network triggered or user disconnection are also logged and can be re-called if required with time-stamps.

The Signal Strength Management feature can also generate reports that show all network triggered faults and disconnections. With more and more Voice and Data Connect services coming on-line, this feature provides a powerful tool for end-users to claim rebates for network specific drop-outs to voice and data calls.

Another emergency option is to backup or transfer certain SIM card or other data to a Computing or other distributed mobile architecture hardware device. The preferred embodiments include this feature during a normal call also where there is a battery dropout whereby the number and call details are displayed on the palmtop or distributed mobile hardware display screen. This allows the user to re-dial after recharging the device or from another mobile or land-line phone the contact of the last call. This may also support the local format to call if in a roaming location.

The telephony features provide so-called Information Services which relate to the use of Telephony applications on Smart Communicators and their reliance for Information Services. For example, country code data retrieved from the Telecom Carrier connected can be synchronised in a function

which enables a user to update and synchronize their Diary, time clock and itinerary from this telecom Carrier data. This synchronisation is achieved by synchronizing the readily available Mobile Tower data retrieved by the Phone and managed by the computing device attached, whereby multiple time zones that exist in some countries, the user sends a wireless messaging request that will identify the location and retrieve the relevant time zone data or prompt for a manual entry of a landmark, eg Sea / Airport, Bus / Train Station or major city. This data can also update all mobile connected devices and even forward these details via available Access Server devices that are connected to the outside world. The Access Servers may have data for software to manage from some form of communications to a server and / or Profile or Time Synchronisation application.

This Time and Location information can also be updated via a wired or wireless Access Point Server connections at Transport Service bureaus and providers ie. Car Hire, Transport Offices (Bus, Train, Airlines, Ships). Alternatively this can also be delivered through a Web based Internet Café type service and the use of cookies, dialup connection details (reviewing dialup telephone number format) and browser language can be used to identify the users location and time-zone .

The Country Code Synchronization is also adaptable to existing mobile data connections ie. Wired or wireless connectivity such that the country code system can also be incorporated in intelligent voice call and messaging to enable a user to determine the best delivery method to contact another user. For example : If a user tries to call from Australia at 9pm another user in USA West coast, they are likely to wake them at the time would be early hours of the previous morning. The system may suggest sending an email, SMS or fax message and / or calling at a better time. It may prompt for a specific time.

Furthermore, the time and / or location synchronisation can also be cross linked with the Customer Profile Smarts and Historical Data cross-referencing in order that it enables user to automatically update their clocks when they connect to a network and or via a telephone based Internet service while abroad and determine the best communication method to contact another user in the same or another time zone. The software can also enable all users in that Time Synchronisation network to see their counterparts on a world map and / or what time it is there and what is the best form of communications now and / or when is the best time to eg. Call them.

A Dialling information service Wizard is also provided that advises on the number to be dialled by reviewing the country code of the number being dialled and establishing how to dial from the current location (if roaming). To achieve this the user may be prompted for input on which location/country or city is this format of the number dialled from. By viewing the international code (s) and feedback from the user, additional other local or remote retrieval information services may also be presented to the user including call costings by various roaming carriers, additional location services and events etc. The Dialling Wizard may also be used to establish dialling from other countries (with the appropriate feedback from the user on where this number is dialled from in its current form) and may display method to dial from another mobile and / or from a land-line phone.

The system also provides additional Voice Mail Options for SMS based **Voice Mail** notifications. When a call is missed, it is logged as a missed call by most phones today. If caller ID is detected, most phones will display the name of the caller. If they are not in the phonebook, only the number is displayed. If no caller-ID is detected it will display not available

While most people will leave a voice message when they call a person who has diverted their calls to Voice Mail, some will not as they prefer to hang-up.

The described system enables the user to predict who the caller was by reviewing the Missed Call Summary list generated . The user can then update the details in the address book or check Voice Maill message and / or send an SMS (or SMS Fast Message defined in this document), to the missed caller during or after the call is terminated, re-directed or listening to Voice Mail or just hung-up. This ensures the caller gets some feedback (templates may be used according to caller profiles, time of day or manual selection by user) and the receiver is informed about the action and feedback from that call that was actioned almost immediately.

Furthermore, the described system also provides a Voice Mail: Last Call Review which is designed to predict the caller linked to the SMS Notification and compliments the Voice Mail Options for SMS Notification on the receiver end, as it displays the last few Missed Calls by the user and / or any user associated SMS Messages. Effectively it attempts to link and summarize all calls and messages received.

There is also a Voice Mail Link to Caller-ID and Contacts Database which pre-empt who last caller was by reviewing last five calls, and also displays any PIM related content or tasks. These may include associated PIM buttons (if large lists) or last 5 entries found (user definable) There is also an Outbound Voice Mail Message Send facility with the option to send SMS message to contact while leaving an outbound Voice mail. This may also trigger Caller ID on outbound calls to be left on and also include Fast Message Input support for outbound call triggered Message creation..
A further option may be to pre-select or send other template / forms of messages subject to hang-up and customer profile settings identified via CID.

By logging and listing details of missed calls inbound (last missed calls in last x number of minutes) when an SMS Notification for Voice Mail comes in, the user can often predict and update the details of the inbound missed caller. If the name is not in the Phonebook, the system may assist in updating their details in a new phonebook entry record or if the call is received at a certain time, it may be matched to a described Profile Caller..

The system of the present invention includes a synchronisation module that enables the common content and data to be synchronised across the user's various hardware and associated common software banks of data. The system provides updating and sharing data across various platforms and also using key devices and content from these devices to synchronise clocks, alarms and systems managed and / or operated by the user anytime, anywhere.

Another aspect of the present invention is the merging of two key technologies that form the basis of an integrated smart communicator device and appropriate software: ie the mobile phone and the Computer device. This integrated device is effectively an example of a mobile phone. In a distributed mobile device architecture system, which unlike conventional mobiles, it does not have a keypad, LCD

device also includes an on / off / vibrate / personalised key, a voice mail / sms recall key, an answer / hangup key, or a combination of some / or all of the above. The device is designed to be used with a range of computers – both desktop and laptop/palmtop and can also connect to Desktop Computers (wired or wirelessly, ie can connect to PCs, Laptop / notebook PCs, Palmtop Computers or specialised Telemetry and vertical market devices.

The device can have a built-in or removal battery, an internal and / or external port antenna and a SIM Card slot for inserting a Smart Card designed for Telecom Carrier registration to a single and / or variety of networks.

The size, shape and form factors to be introduced will vary over the next few years, with the size expected to shrink with time.

The device is designed to connect to various computing and distributed mobile accessory hardware devices and provide alternate methods of input/output via these accessory devices that are connected to the Mobile Communication Host Device (wired or wirelessly) using software designed to achieve this. These devices will display or play inbound / outbound audio according to the device limitations.

For example : A headset may be used as input to supporting Voice Recognition hardware and playback text to voice messages.

A Watch Display with limited characterisd may display limited SMS text. The watch may also be used to display Caller-ID when a call comes in and enable the user to answer or reject that call. Limited advanced call management features may be available ie. Preset responses only when triggered from the watch display terminal. On the other hand, the user may opt to switch on their Palmtop which has less limitations than the watch. Here the user may input more advanced features described in this document ie. Answer and Audio message played while put on hold.

This approach of displaying details and features according to the distributed mobile accessory hardware's capabilities can also interact on a demand basis to a variety of portable and desktop computing devices and services (through wired and wireless connections) and provide more detailed input/output data and content such as advanced messaging, content viewing, synchronization, and Fast Dial and other phone parameter settings.

The Mobile Communication Host device can also be programmed via a fast dial key to call a call centre (eg. A Rental Phone that calls its own call centre) that establishes an operator connected call. This can offer substantial cost savings to phone operators who explore Voice Over IP and reduced cost pipes instead of current Mobile Telco Carrier pipes.

When combined with a portable computer or other distributed mobile architecture hardware, the device becomes an integrated Smart Communicator as without it is merely a no keypad / screen-less phone with speed dials. The device is now capable of performing additional communication based data services.

The hardware to implement this device is a modular arrangement designed to connect to a range of computing devices, (both palmtop/handheld form factors and laptop or desktop personal computer form factors) as well as other distributed mobile architecture hardware such as displays (watch display), audio playback devices (headsets) and wireless host interaction.

The hardware consists of a mobile phone module complete with SIM Card (or crystal programmed), a battery for powering this, a built-in or external antenna, some uniquely positioned buttons and or dialer toggle / button, and a communicator connector. This is all wrapped together in a mould to form a standalone mobile telephony device.

The feature include a toggle/dialer buttons consist of an On / Off / Vibrate / Profile specific Buttons, Answer / Hang up Button, Operator Connect Button, Speed Dial Buttons, other customisable buttons as required. The device is designed to be used as a stand-alone phone. It may initially be programmed by a computer.

The device deliberately does not include a phone dialer or display. This is made available through its communications port connectivity enabling it to connect to a range of mobile and desktop computing devices and other display and audio playback hardware defined as distributed mobile architecture hardware that act as the keypad /audio input and display. With these computers connected additional speed dial numbers, ringtones and other features can be added and common accessories such as palmtops, watches and wireless headsets can become the display and playback devices instead /or complimenting the mobile phones of today.

The Speed dial keys on the hardware are read directly from the SIM Card or from another distributed mobile accessory architecture connected device. The SIM Card position is hard-coded in via software or can be flash upgradable. The software program from a computer changes the value of this speed dial. The speed dial key dials whatever number is in that position. This way all numbers are customisable. With flexible options that include audio services such as an FM Receiver, Voice Activated Dialling, MP3 Player, fixed and / or mobile positioning and removable batteries and a concealed antenna, these pervasive devices are designed for ease of use and entertainment to compliment other accessories that better caters for the varying user requirements in this world.

The Mobile Communication Host described can also operate with a traditional Mobile Phone as the Host Device instead.

The so-called Time2GO application described for retrieving time and location data can function in a variety of ways including :

- Connected to a Mobile phone (CDMA/3G / GSM Phone with support for Infrared / PCMCIA Data card and cable connection to phone / cable to PDA or notebooks/PCs,

The system can detect time and Location synchronisation information via these and other wired and wireless connections to determine the Country Code/Time-zone.

The software can update the Time Synchronisation of the connected and linked devices' Time Clocks using various means :

- the PSTN Modem setup
- the Internet Browser setup.
- It may also use the Notebook /PCs Dialup Networking setting detection for local dial up number detection of the local ISP, the local POP, and when roaming, the roaming ISP, and Local POP; and for Calling Card Carrier Number Detection to determine the location by reviewing the dialling strings, pop connection and browser default countery setting.
- Further to the above, the device may also use a Web based Dialup Locality detection to determine location.

Dial Wizard – checks input numbers and provides assistance in finding and dialling: Input like home, displays: and local dial codes from a mobile. local dial codes from a standard telephone. In another form, Input according to country from a mobile, displays: local dial codes for dialling from a standard telephone and international dial codes for dialling from a home.

By entering a phone number, the +PIM wizard can identify from the number and display : related country and main city details, Option to pull-up or retrieve locality carrier rates, Identify least expensive carrier at the time of call.

The foregoing describes only some embodiments of the present inventions, and modifications obvious to those skilled in the art can be made thereto without departing from the scope of the present invention.

CLAIMS

1. A method of operating apparatus connected to a communication system, the apparatus including a distributed mobile architecture of at least two input/output devices having display means and/or audio speaker/microphone means, said method including providing a software mobile voice and data interface whereby said input/output devices communicate with each other to provide a variety of telephony voice and mobile data/content and messaging functions to be sent or received internally between the devices or over the communication system.

2. The method according to claim 1 wherein said interface includes a common content and data browser interface whereby the method includes an integrated approach to search, save and link content between the input/output devices using the common browser interface.

3. The method according to claim 2 wherein the common browser interface includes a messaging interface used to create, manage and send/receive messages in various messaging formats.

4. The method according to claim 3 wherein said messaging interface includes a messaging mechanism formatting means which formats a type of message into other multiple message format types to be used in a selected mode of communication between other apparatus on the communication system.

5. The method according to any one of claims 1 to 4 wherein the method provides a profile compilation means whereby a profile of contact persons is stored, the profile indicating the preferred communication type to be used for any particular contact person.

6. The method according to claim 5 wherein the profile includes how the contact person prefers to be contacted, when and how they usually respond to communication, timeframes and method of feedback.

7. The method according to claim 5 wherein the profile includes links to websites and other content and the like and also link associations between different contact persons.

8. The method according to any one of the previous claims wherein the method includes combining answer and reject inbound/outbound call functions with an audio call playback message and/or

instant messaging /sms to enable user to respond when unable or unwilling to take a voice call or other type message.

9. The method according to claim 8 wherein the method includes a call barring and/or instant messaging/preset templates for sms to reject, limit access and advise unavailability to nuisance callers or unavailable feedback to other callers.

10. The method according to any one of the previous claims wherein one of the input /output devices includes phone device with a SIM, whereby the method includes unlocking of the SIM which has been blocked, said method includes the step of enabling the user to the user to dial the Telecom Carrier of the blocked phone from the mobile phone and allowing the user to unlock their phone device directly, rather than requiring the use of another mobile or land-line phone and obtaining the requisite information of who to call to do so.

11. The method according to claim 10 wherein the step of calling the carrier is enabled by adding the Telecom carrier in the SIM register for Emergency Numbers alongside the International Emergency number which is compulsory on all mobile phones and is not not barred from placing calls.

12. The method according to any one of the previous claims wherein one of the input /output devices includes phone device with a SIM, connected directly or indirectly with other input/output devices whereby the method forwarding critical data to the other connected devices which can read said data, in the case of a number dialled and / or an emergency call is being made when battery of said phone device is detected as low.

13. The method according to claim 12 wherein the other input/output device includes a display means, storage means and operational means to address the emergency or low battery in-convenience.

14. The method according to claim 13 wherein said critical data includes other relevant data including land-line and mobile emergency numbers, listing of last five cell towers connected to, GPS co-ordinates, user medical summary and the like.

15. The method according to any one of claims 12 to 14 wherein , if signal strength or battery is low in the phone device a message/sms may be sent to an emergency preset device or relevant details may be forwarded to other input/output device prior to emergency call being made.

16. The method according to any one of the previous claims wherein all associated timeclocks within the apparatus are updated when the apparatus is detected as being in the roaming mode or out of current time-zone.

17. The method according to anyone of the previous claims wherein the apparatus shares the current time-zone information of the apparatus with a server or other users of the communication system.

18. The method according to claim 17 wherein the sharing of information is updated via messaging or other Client Server based system, either wireless or wired connectivity and updating.

19. The method according to anyone of the previous claims wherein the apparatus apparatus detects in which particular country the apparatus is presently roaming and provides international code requirements for dialing format for its use.

20. The method according to claim 19 wherein the user is able to input a call number in the apparatus, advise the location and country this format is dialed from, and then the software provides suitable dialing format to be used from the current or optionally other country locations.

21. The method according to claim 20 wherein the dialing format is displayed on the input/output device to indicate how to call from either a mobile phone or landline arrangement and can also automatically dial the required number in the requested format.

22. The method according to anyone of the previous claims wherein the apparatus includes a mobile phone with wired or wireless connection to a portable or fixed computing device or integrated device to a portable or fixed computing device and some form of audio communications.

23. The method according to anyone of the previous claims wherein the input/ouput devices include a mobile phone handset which has a display which is used to identify an address book entry caller, and a computer connected thereto and which includes data of the caller, whereby the computer provides details of the caller on its display, the computer being either a desktop or portable computer.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/AU01/01384

A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl. [7]: H04Q 7/32, H04M 1/72

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WPAT, Internet: communication, mobile, cellular, software, interface, computer, message, notebook, laptop, pda,program, pc

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 99/16280 A1 (ERICSSON, INC) 1 April 1999 Whole document	1-23
X	US 5983073 A (DITZIK) 9 November 1999 Whole document	1-23
X	US 5719936 A (HILLENMAYER) 17 February 1998 Whole document	1-23
A	US 5327486 A (WOLFF et al) 5 July 1994 Whole document	1-23

☐ Further documents are listed in the continuation of Box C ☒ See patent family annex

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
29 January 2002	12 FEB 2002
Name and mailing address of the ISA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaustralia.gov.au Facsimile No. (02) 6285 3929	Authorized officer **DEREK BARNES** Telephone No : (02) 6283 2198

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/AU01/01384

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report		Patent Family Member					
WO	99/16280	AU	92976/98	BR	9812354	EE	200000169
		EP	1016302				
US	5983073	US	2001030850				
US	5719936	EP	731589	FI	961082	JP	08-288988
		DE	19603483				
US	5327486	CA	2158833	EP	691061	WO	94/22259

END OF ANNEX